

CRISIS NOTES

Dahl: Behav. Sci 1957

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Feedback

COMMUNICATION

Emphasis on feedback implies that evidence on "actual" results of past decisions should be of special importance to current decisions.

But is it relevant? Are conditions unchanged?

Can it be properly interpreted: e.g. how much is reported error due to past decision, how much to unforeseen disturbances, external or internal; have they disappeared; are others likely? How much noise in feedback channel? Distortion? How long is lag in feedback channel; how out-of-date is info, compared to current position? How reliable is it for predicting current + future position?

How reliable is partial or sample feedback

[quality control; spotty recon, BDA] to predict total output?

Compare it, as basis for decision, with: plan, ^{direct} simulation, analytic model, evidence on environmental + target change, and internal change + performance, rather than direct "output" measurement or "error" observation. (assume former: faster, cheaper, broader types of data).

But: feedback can emphasize:

"reliable evidence" on present/future position of system, relative to goal-state, as influence on choice.

Choice also needs evidence on: the probable results of alternative modes of action. Info/evidence of results of past choices may help; if past choices still available, enough variety in actual past choices, circumstances & ~~goals~~ were similar enough to those anticipated; no new, ~~and~~ alternatives available.

But, such info rarely enough = to tell "what to do now."

Minsky:

In solving "hard problems," the nature of past failures may give almost no clue as to "what to try next"; one must simply run through procedures in order of very general past successes, not in a way tailored to current circumstances.

"Mesa phenomenon"; solution-space not structured, revealing manners to goal or steepest (or any) gradient, except in certain regions. So current feedback is little help,

except to say: "Keep trying; you ain't there yet." (4 bad things will
Likewise: FEEDBACK IS NO HELP IN ROULETTE. And you're wrong).

Wiener: Control on basis of actual [past: lag always involved] performance rather than its expected performance [done?] is known as feedback.

Human Use - p. 12

(Info channel essential, between R+C, or R+E?

Collection of info at low energy levels?

"Performed action on the outer world, and not only their intended action, is reported back to the central regulatory apparatus."

|| [i.e. "actual" performance is among the evidence used in further decisions.]

Feedback mechanism is a CONTROL apparatus for carrying out a "fairly uniform voluntary COMMAND" under different circumstances of load, disturbance, fatigue, of Effector mechanism.

"Actual" performance — i.e. evidence on recent past performance on which you should give high odds.

Oscillations of swing illustrate: unknown lag in feedback (or, failure to observe velocity, acceleration; to anticipate) can make "response to feedback" inappropriate (random swings might stop swing sooner).

p. 184. Responses may be "negative" (against previous or current tendency) (or, tending to reduce "error"); not messages, info, "feedback."

Emphasis on one's own past performance; vs., ex example of others.

288: Feedback: alteration of input by output; gain: ratio of output to input. Feedback negative or inverse if the return decreased the output [error?], say by subtracting from the input. ... or decreased the gain.
[assumes metrics]

$$P(E|F) \quad K(E|\bar{F})$$

$$p = q \quad \frac{1-q}{1-p} \quad \frac{p}{q} \quad p-q$$

$\frac{4}{5}$	$\frac{1}{5}$	4	4	3/5	For given p , or given q , ordering is the same; but when both $p+q$ vary, order may vary
$\frac{4}{5}$	$\frac{2}{5}$	3	2	2/5	
$\frac{4}{5}$	$\frac{3}{5}$	2	4/3	1/5	
$\frac{3}{5}$	$\frac{1}{5}$	1	1	2/5	
$\frac{3}{5}$	$\frac{2}{5}$	2	3	1/5	
$\frac{3}{5}$	$\frac{3}{5}$	3/2	3/2	1/5	
$\frac{2}{5}$	$\frac{1}{5}$	4/3	2	1/5	

5 levels 5 levels 3 levels

$$\frac{p}{q} = x \quad \log p - \log q$$

$$\frac{1-q}{1-p} = y \quad \log(1-q) - \log(1-p)$$

$$\frac{p}{q} = \frac{\frac{1-q}{1-p} + q - 1}{\frac{1-q}{1-p} \cdot q} = \frac{x - q + q(1-p) + 1 - p}{q(1-q)}$$

$$p = xq$$

$$\frac{1-q}{1-xq} = y$$

$$y(1-xq) = 1-q$$

$$y - yxq = 1-q$$

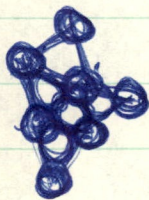
$$yxq = y + q - 1$$

$$x = \frac{y + q - 1}{yq} = \frac{1}{y} \frac{y + q - 1}{q}$$

$$\frac{= q + q - qp + p}{q - q^2}$$

$$\frac{p(1-q)}{q(1-q)}$$

Hainson ONR 1948 Russian Chess-Playing
Edwin S.
Schneidman: Nixon-JFK; Kuchner-K
(Suicide Prevention Center;



COMMUNICATION

Milburn

Incentive for sender of "message" to be ambiguous, and to conceal from himself the degree to which his message has become equivocal:

2) Desire not to commit oneself "too far".

This may be reflected in:

- a) Wording of message
- b) Other statements (to others, public, colleagues)
- c) Failure to implement
- d) Hedging actions

b) The desire not to commit ~~asked~~ one's prestige may lead to avoidance of (relatively unambiguous, easily recorded, consensus of interpretation) verbal comm; this motive may lead not only to "non-verbal comm" (inherently less ambiguous) but to choice of more ambiguous non-verbal actions.

c) Criteria for deciding whether ~~an action~~ a meaning has "gotten through" are not stringent, or specified beforehand.

d) Compromise with others, who think action is too risky, or commits too much (Potsdam)

Reader of change: does he look back?

Turning back on gunman: do you lunch?

Look at a glance

Ritualized non-verbal comm

Counting behavior: (won't verbalize, commit prestige)

Trouman - Potsdam

"I couldn't have told him more plainly."

USD: belief that you can understand other's feelings.

Trouman's order to MacArthur

"I've got you; go on" (Rostow) (you know he hasn't) "Check."

"OK?" (Lenthorn; insulting probe for feedback).

Meanwhile, receiver of message in crisis has strong incentive to "read meaning" into it, to provide basis for crisis-response.

So, sender thinks he has sent clear message, receiver thinks he has received clear message (not necessarily that intended) : but ~~mean~~ "meanings" are mismatched about randomly.

Moreover, neither feels need for further ~~search~~ feedback, test, search for hypotheses.

The intended audience may be ambiguous (K. misread statements; statements to domestic critics); may have false impression that he is talking to you.

(Psychoanalyst: tries not to communicate; but really does talk; & his silence is communicative.)

Main

Murray

To what extent are you willing to communicate
by actually committing

[How to influence opponent to:] search + invent new actions

2) generate new hypotheses

("Surrender")

3) entertain new premises

"Unfreeze opponent."

Don't let him see himself as boxed in.

Not first: influence him to choose "rationally" among
given actions, given hypotheses.

Higgs: impression that RAND is moribund:

a) Openly supporting each other in discussions (UCLA; ^{hang at} start for Rand)

b) interrogating each other, so experts ^{overconfident} ^{oversimplified}

c) Briefing style of delivery: know all the answers;

qualification suppressed in initial, main part. Didactic.

d) Failure to

Formulate hypotheses as to interpretations; test them, +
test need for search ("closeness of fit" for best one considered);

"Don't just insure: Experiment."

"Find Out — but don't bet everything on your 'results'."

When does person take big risk?

Millburn: Counterphobic reaction to feeling or fear of
impotence: feeling of weakness, inability to
control events or succeed.

Taking big risk gives feeling of power,
of seizing initiative, forcing things, choosing
(choosing failure rather than waiting for it).

Crime

Also, when "success" is forbidden type, it is experienced by
taking big risk. And failure may be ambivalent.

When does person violate "reality" principle — act when
failure is certain?

When id + conscience conspire; gratify impulse, at
price of punishment.

Scars: rebel, with the expectation (hope) of
downfall as punishment

When is planning impossible?

Conflict; uncertainty as to what I will do; attention diverted
devoted to conflict over plan; desire to increase prob. of "bad," unplanned act.

[In Shannon com theory:

is it assumed that effect of "noise" is independent of the symbol sent? So, L.F. for one symbol received has the same slope as for another?

If not, is redundancy the answer? Can it remove ambiguity?